

ESSAY
ON THE
PLAGUE.
CONTAINING

A DISCOURSE of the Reasons of
it, and what may be proper to pre-
vent it.

By **RICHARD BOULTON**, some-
time of *Brazen-Nose-Colledge* in **OX-
FORD**.



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Y. A. C. E.

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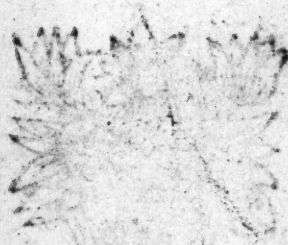
DISCOUNTS OF THE

AND WHAT MAY BE PAID

BY RICHARD

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T O

His Excellency

The Right Honourable

ALAN Viscount **MIDDLETON**

One of the Lords Justices of his Majesties
Kingdom of *Ireland*, Lord high Chan-
cellor of the said Kingdom. &c.

May it please Your Excellency,



OUR Great Intrinsic
Merit, and Your No-
ble Endowments, of
Mind, as well as For-
tune, have justly rai-
sed you to so much
Honour and Dignity;
that no Encomiums
can add to that Lustre
which adorns Your Person ; and shines
through all Your Actions. I will not

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there-

The DEDICATION.

therefore pretend as usual in Dedications, to draw the Character of so Great a Person; since all that I can say must come short of the Original; which appears brightest in it's Natural Colours; and which is so conspicuous and well known to the World.

Your Excellency's great Goodness and Concern for the good of the Publick, encourages me to lay the following Papers at your Feet; and gives me sufficient Ground to hope for Your Excellency's favourable Acceptance and Encouragement; since the Design of them is chiefly for the good of those under Your Excellency's Care and Protection, and which is the main Intention of

Your Excellency's

Most Humble and

Obedient Servant,

Richard Bolton.



A N
E S S A Y
O N T H E
P L A G U E, &c.

C H A P. I.

Of the Causes of the P L A G U E.



THE Plague is a Disease of so Malignant and Contagious a kind, that it hath not only justly alarmed the World with its dreadful Effects; but hath rouzed and excited Men of Learning and Skill, in all Ages,

to iugnire into the Nature of that Contagion; that they might be the better able to prevent, or suppress the growth and increase of it. The great progress it hath made, and the dreadful Effects it hath produced in this present Age; hath given Men of Learning and parts, a fresh Occasion to imploy their Tallents on the same Subject; and it may seem needless

for me, who have such a small share of either, to offer any thing from so weak a Pen; after Men of so much Worth, and such known Characters; But since too much assistance cannot be given, to extinguish or guard us from so great a calamity; I hope the World will excuse me, if I humbly offer to contribute my small endeavours to so good a purpose.

Upon this occasion, we shall not recite at large, all the Opinions of Learned Men upon this subject; our Design at the present, being not so much to tell Men of Learning, what they or I my self may have read, as to propose such Measures as may be most proper to prevent that Infectious Distemper, or to remove it if it should happen, yet lest we should seem to slight the Writings of Men of Learning and Merit, we shall briefly consider what hath been said by those of most Note; that it may the better appear, what Occasion there might be, for adding some further Thoughts.

In pursuing our Present purpose, we shall observe the following Method; First we shall consider the Cause of this pernicious Malady; and then what Methods may be reasonable to prevent and remove it.

As to the Causes of the Plague, they are either Antecedent, which precede the appearance of this Distemper; or Conjoint, which attend it's approach; or Procatartick, which put these Concurring Causes in Action; all which acting together, produce the formal Cause of the Plague, in the Bodies of Mankind attended with such dreadful Symptoms, and fatal Consequences.

The Antecedent Causes of the Plague, as well as of all other Contagious Distempers are

either External, or Internal. The External Causes chiefly respect the Particular Temperature and Qualities of the Air. The Internal, the Disposition and Temperature of the Humours in Human Bodies ; which united together, may be esteemed conjunct concurring Causes ; which make up the formal Cause.

Thus much being briefly premised concerning the Antecedent and Conjunct Causes in General, we shall next proceed to inquire more particularly into the Nature of those Causes which are Antecedent, and precede the appearance of this Distemper.

And First, as to those External Causes, which Respect the Particular Temperature and Qualities of the Air, we are to consider, how the Air may come by that particular Contagious Temperament ; and how it may acquire such Qualities.

We are then to consider, that the Air or Atmosphere we live in, is, Circumambient and encloses the Superficies of this Globe of Earth we inhabit ; and that the utmost extant of the Atmosphere, which circumscribes our Vortex, and may be properly said to belong to this Globe, is far distant from those Orbs, which move in different Spheres ; and can receive but small Impressions from the glimmering refracted Rays, which are transmitted through that vastly extended Æther, which interposes ; and consequently the Qualities of those Orbs, can have little or no Influence upon our Atmosphere, to alter it's Temperament.

If then the Atmosphere or Air, cannot easily be impregnated with vitious Qualities from such distant Orbs ; and is more likely to receive them from the Earth ; we are to enquire

next, how the Temperature of the Air may be altered, vitiated, and depraved, and impregnated with malignant Qualities from the Earth, and other Bodies it encloses.

Its true the Sun, by the heat of it's Rays, hath a powerful Influence on this Globe; and not only powerfully affects Human Bodies, but all other Animals, as well as Vegetables; Yet it affords no vitious Qualities but promotes and improves the Natural Temperament and disposition of those Bodies it affects; renders Animals lively, Sprightly, and vivacious; and makes vegetables increase and thrive. So that the heat of the Sun as such, hath no vitious or pernicious Qualities, but what are amicable and wholesome to Human Bodies.

If then the Air can receive no pernicious Qualities from Distant Orbs, we must next consider, what it may be Impregnated with from our own Globe; and shew its Temperature may be thus depraved.

If we take a View, of the superficies of the Earth, we shall find, that it is incumbred with several Substances endowed with Qualities very obnoxious to human Bodies, as not only the stench of putrified carcases, and other fetid Stinking Bodies, which emit, and fill the Air with noysome and ungratefull Effluriums, but even the Impurities of standing waters; unclean ditches; the Stench of slaughterhouses &c. through lazyness and carelessness, contribute much to the unwholesomness of the Air, we are constantly obliged to breath; and though the Beams of the Sun of themselves, have no ill Qualities, yet by accident, as they contribute to promote and raise these Unwholesome Vapours, they in some Measure improve their ill Effects,

as well as by promoting Putrefaction, and adding to the Offensiveness of the Vapours that rise from them.

But not to mention these extraneous Bodies; if we only take a view of the Superficies of the Earth it self, we may easily observe, how the Temper of the Air is Altered by Effluvia from it; not only according to the different Seasons of the Year, but different and in distant Climates, according to the various Natures and Qualities of the Soyl.

In different seasons of the Year, we see how the Temper of the Air is altered, by different proportions of Nitrous and Sulphurous Vapours; which occasion different Degrees of Fermentation in the Air, and affect our Bodies with various sensations of Heat and Cold.

That in different and distant Climates, the Temper of the Air is rendred unwholsome, and it's temper altered, by the Effluvia of the Earth, which variously deprave it according to the Nature of the Soil, is evident, from those Distempers which are peculiarly Endemical in such places, and constantly affect those Parts above any other, as Agues in *Kent* in *England*; whereas, in *Cornwall*, the Effluvia the Air is impregnated with there, renders the Inhabitants lusty and wholsome. In *Affrica*, the unwholsome vapours of the Earth, alter the Temper of the Air, and occasion hot winds, and stifling Gales; which are so disagreeable, that they produce very fatal Effects, amongst those especially, who are unaccustomed to those Climates. The Nitrous Exhalations that flow from the vast high Snow hills in *Affyria*, chill the Air, and occasion strong Gales of Wind, which conveigh themselves, and retain the

same Qualities, for several Hundred Leagues distance. The last hard frost but one, being then in *Italy*, the Damps of the Apenine Hills, made the Air as Cold there as it is usually here in Winter. And in the Island of *Candia*, which was formerly *Crete*, as well as from the *Alps*, betwixt *Italy*, and *France*, I have found the cold Damps no less troublesome, where the heat at other times is no less tedious and offensive, the warmth of the Soyl, emitting Sulphureous Vapours, which add to the heat of the Sun. The unwholsome Vapours that rise from the *Andes* and *Sera*, Hills which run through the Middle of *America*, render those places dangerous and unwholsome, especially to Strangers, to whose Constitutions they are most Disagreeable.

Thus we find, that even the Superficies of our Globe affords vapours very offensive to Human Bodies, yet produce no such fatal Effects, as to destroy such Multitudes, as fall by Pestilential Contagions.

But if we look deeper into the Bowels of the Earth as far as we are able to penetrate, we shall find several kinds of Minerals, and Bitumens, which Emit very pernicious Effluvia; and may Impregnate the Air with such particles as may produce very ill Effects in Human Bodies. Those that work in Lead mines, or are much affected with the Mineral Salts of that Metal, whose Effluvia are transmitted through the Air by the force of fire, as Plumbers and Potters look pale and livid, and often grow consumptive, and waste away with a Marasmus.

And no doubt but the Air may be filled with Mineral Effluvia of a worse Kind, which

may produce more dreadful Effects and fatal Consequences, and give Rise to Pestilential Contagions; as the Honourable and Famous Mr. *Robert Boyle* hath observed; that great Person whose learned Improvements, as well as his wonderful Sagacity, and singular Piety, have justly made him the Ornament and Admiration of the learned World, imputing Pestilential Contagions to Mineral Exhalations of an Arsenical Kind; but as to the Nature of these Contagious Effluvia, we shall further consider them, when we come to take Notice of these External Antecedent Causes, as Conjunct.

That the Air is impregnated with Contagious Particles as an External Antecedent Cause, is so reasonable to believe, that it seems beyond Dispute; but besides the Infectious Parts of the Air which may propagate this Infection, the Learned Dr. *Mead* supposes, Diseased Persons, and Goods transported from infected Places, to be Causes of the Propagation of this Malady; but these cannot be said to be Primary Causes, since the Air infected those Bodies, and those Goods; so that rather than being Causes of the Air's Infection, they only seem to be Instruments of conveying the Air's Primary Infection, and consequently are but secondary Causes of it's Propagation.

Thus much being said, of the External Antecedent Causes of Pestilential Contagion, which arise from the Temper of the Air depraved, primarily, by vitious mineral Effluvia or Exhalations out of the Bowels of the Earth; and secondarily, from Effluvia of infected Bodies or Goods, we shall next enquire into the Internal Antecedent Causes of this Distemper.

The Internal Antecedent Cause of Pestilential Contagion, we take to be, a particular de-

proved Disposition of the Animal Humours or a vitious Temper of those Fluids, which circulate through the Sanguiferous Vessels ; and perhaps too, of those more refined Spirits, which are separated from the Mass of Blood, in the Corticle or Glandulous Part of the Brain.

That the External Disposition of the Air alone, is not sufficient to produce the dreadful Symptoms of this Distemper, but that an Internal Indisposition of the Humours, is likewise requisite to receive those External Impressions, is evident, both from the Manner of its Propagation, and the Nature of the Symptoms that attend it.

And first, that a peculiar Disposition of the Humours, to receive those External Impressions, is necessary, appears, from the Manner of its Propagation ; for if the Temper of the External Air were alone sufficient, all Bodies being equally exposed to the Inconveniences of external Contagious Air, would be alike affected with it's pernicious Qualities ; and every Body must be seized with the Distemper at the the same Time ; but we find, that a great many escape the fatal Effects of it a long Time, and that some, though they continue all the Time in the Place infected with this Contagion, and not only Breath the same Air, and consequently partake of the same primary Cause ; but also, of the secondary Effluvioms of diseased Bodies, yet they escape the mischievous Effects of it, and are never seized with it at all.

Secondly, That a Prædisposition of the Humours, to admit of External Impressions, is an Antecedent concurring Cause, is plain, from the Nature of the Symptoms that attend it ; as Boils, Buboes, Carbuncles, &c. which cannot happen

happen, without a previous Temper of Humours, which must supply the material Cause of these Tumours ; for, since whatever is the Cause of these Tumours, must first be contained in the Blood, before it can be discharged into these Parts ; the Blood, whilst such depraved Humours are contained in it, must consequently be perverted and of an Heterogeneous Temper.

It appearing from what we have briefly said, that there must needs be an Internal Indisposition, which as Antecedent must receive the Impression of External Causes ; having already shewn, how the External Cause may be contracted in the Air, I shall next enquire, how this Internal Cause may be collected in the Body ; and what the Nature of this indisposed humour may be, and how it is contracted.

If we consider the Nature of it, it will not be difficult to conceive how it is contracted ; since it will easily appear, to any one who considers the Nature of the Parts, and their Uses, how Humours of different Kinds may be contracted, and heap'd up in the Mass of Blood. The Nature of this Humour appears from the Effects ; for since the Matter discharged into the Glands, is too gross to circulate through them ; but stagnates, and creates Tumour, it necessarily follows, that the Mass of Blood is too gross and thick, since such gross Humours flow from it ; for as long as the Mass of Blood and other Humours contained in it, retain a just Degree of Tenuity and Thinness, the Force of Circulation will protrude and thrust them through the small Capillary Vessels without Obstruction, and as long as there is no Obstruction, there can be no Tumour ; but when these
Humours

Humours, are too thick to pass through the small Extremities of the Vessels, or the Glandulous Parts, they presently commence an Obstruction; and the Humour obstructing the small Vessels, not giving free Passage to subsequent Humours, press'd in by the Force of Circulation, the Part must needs swell and tumify. For it is not the Qualities of Humours, as they are sharp or Corrosive, that occasions Tumour, if they are but thin enough and sufficiently attenuated to pass through the smallest Capillaries; which is evident in Bodies which abound with thin Scorbetick Serum; and even Corrosive Mercury, which will erode and destroy the Texture of the Parts, will not in Humours sufficiently diluted, occasion Tumour; but rather, by the Subtlety of it's Parts, reserates Obstructions and dissolves Tumours.

From hence it appears, that besides the External Contagious Parts, there must be an Internal Predisposition of the Humours in the Body; which may be contracted several ways. For the Mass of Blood may become too thick and gross, either by Errors in Diet, Weakness of Digestion, or by a præternatural Exhausting of the Spirits, or sudden Colds.

Errors in Diet render the Mass of Humours too thick, either when what we eat is too gross in Qualities; as Meats of difficult Digestion; or errs in Quantities, so as to overpower the Strength of Natural Digestion, and thus Crudities may be heap'd up in the Blood. Weakness of Digestion congests Crudities, when the Natural Heat and Fermentation of the Stomach is too much depressed to digest what we eat, and make a good Chymus; which may still want a sufficient Quantity of Choler in the

Duode-

Duodenum, to digest it further into a good Chyle; for want of which, the Blood must have crude and indigested supplies of Nourishment, and consequently be clogged with grosser humours. The Spirits likewise being preternaturally exhausted, either by passions of Mind, or other Accidents, may occasion the Collection of Crudities in the Mass of Blood; for the Spirits, in a human Body, are the grand Agent which enable all the Parts to execute and perform their particular Offices; without which, the Digestion of the Stomach flags, and the Liver cannot separate a just Quantity of Choler, to promote the Preparation of Chyle in the Intestines; nor can the more Noble Parts perform their Offices, without a due Influence of Spirits; which, in this Microcosm or small World, our Bodies, is, as the Influence of the Sun is to the Macrocosm, or the Globe we live on, which makes every thing vivacious and lively, spring and flourish: Another Cause which may render the Mass of Humours too gross and thick, may be, sudden and violent Colds; which at once condense and thicken the whole.

But, besides the Causes we have mention'd the Mass of Blood may not only be render'd too gross, but may be vitiated and depraved by the ill Qualities of our food; as by too much Salt, too much sower things; or sharpen'd with pungent and sharp biting things. A great many think nothing relishes, except it tastes of Salt, which superfluous Salts, mixed with phlegm, soon dispose us to an ill habit of Body; and no less but more pernicious Qualities are heaped up, by Sower and sharp things.

Having thus shewn how the Blood may be depraved, and be rendered predisposed to the

Impressions, and ill Effects of contagious Particles in the Air, it may not be amiss to consider further how this Internal Antecedent Cause, may be further depraved by the concurrence of external Causes. Since then we are constantly obliged to breath the Air we live in; and when we draw it in, it must not only pass through the Nostrils, but be dispersed through all the Vesiculi, which compose the Lobes of the Lungs; and since the Olfactory Nerves, are not only branched through the *Osculamentum*, in the upper part of the Nostrils, but the Blood Vessels are dispersed through the Lobes of the Lungs through which, all the Blood in a Mans Body circulates several times in an Hour, it must needs follow that if the Air be Impregnated with contagious particles, the Olfactory Nerves will not only be affected with them in their passage, and consequently the Spirits, but, (if we consider the strange subtlety of Effluvia, and the great Porosity of Bodies, as the Honourable Mr. Boyle hath demonstrated,) that the Blood must be affected and Impregnated with them, whilst it circulates through the Lungs; and consequently, these pernicious particles being lodged in the Blood, must needs pervert and degenerate it, though they do not produce their ill Effects, the Blood at that time, being not sufficiently vitiated and predisposed.

From hence it appears that the External Influence of Contagion is not sufficient to produce this Distemper, without a particular Disposition of the Humours, since every Body that Breathes that Air, must needs have their Blood tainted with the Effluvia, and Contagious particles lodged in the Air, which

which proves what I said before, that the Blood may contain ill Qualities without any ill Effects, provided it be sufficiently attenuated to circulate through the Vessels; but if the Mass of Humours, after they are once Impregnated with these noxious Qualities, should contract an Internal Indisposition, by any of the means I have before mentioned; and add this Internal Cause, to concur with these contagious Effluvia, then the fatal Consequences must needs follow.

The Learned Dr. Mead says, p. 10. " that the
" Infection is not received from the Air it
" self, however predisposed, without the Con-
" currence of something emitted from infect-
" ed Persons; because by strictly preventing
" all Intercourse of Infected places with the
" Neighbourhood, it may effectually be kept
" from spreading. That the Concurrence of
emitted Effluvia, may secondarily infect the
Air, and contribute to spread Contagion, I
doubt not; yet with submission, I would ask
this Learned Gentleman, if the Disease could
be without this secondary Cause, how the first
Person must be infected? when there was no
other Person infected, from whence this con-
currence of Emissions should flow? except it
proceeded, as I assert, from the Contagion in the
Air, and a predisposition in the Body, besides,
if this Assertion were true, as this Worthy
Gentleman says the Paragraph before, " it
" were not easy to conceive how the Plague,
" when once it hath seized any place, should
" ever cease, but with the Destruction of all
" the Inhabitants; but he seems not only to
differ from his own opinion here, but p. 2.
where he says, " The Antientest and best Au-
" thors of Physick, who lived in a Country
B " more

“ more exposed to these Calamities than ours,
“ observed the constitution of the Air, which pre-
“ ceded Pestilential Fevers to be great *Heats*, at-
“ tended with much *Rain*, and Southerly Winds,
where it seems to be attributed to the Air only.

P. 10. He further says, “ the least Wind
“ must necessarily convey whatever noxious
“ Quality resides in the Air alone, even to a
“ great Distance. Of this we have had a fresh
“ Proof in the present unhappy Plague in
“ France, which by keeping careful guard was
“ confined within the Walls of Marseilles; so
“ that none of the adjacent Villages suffered
“ any thing by it till at length some Per-
“ sons finding means to escape, carried the
“ Infection along with them. In answer to
this, I need but repeat, what I have already
said of the concurring internal Antecedent
Causes; for from thence it appears, that as
long as the Blood is not predisposed, but suf-
ficiently attenuated to preserve Circulation,
the Contagious Effluvia do not produce their
Effects; and no doubt but in these Villages, li-
ving in a finer Air than that of a City, their
Blood must be better disposed, and not so apt
to be affected, with the slighter Impressions of the
Contagious Air; and where those Effluvia are
more easily dispersed; but when these Persons
made their escape, the Winter coming on, and
consequently their Blood growing grosser, they
were more apt to be affected with Contagi-
ous particles, whether Primary or Secondary,
except the Season of the Year had been able
quite to suppress the Effects of this contagion.
How these Thoughts, which seem not to be
well compared, come to slip from so Worthy
and Ingenious a Man, I cannot Imagine, ex-
cept his hurry of Business interrupted his
Leisure.

But

But my Design being not for Controversy, but for Improvement and usefullness, I shall rather endeavour to write without faults, than find them in others. Therefore having hitherto considered, in some Measure, the Antecedent Causes which concur to produce this Distemper, I shall in the next place enquire after what Procatartick Causes may put these Antecedent Causes in Action, and then proceed to shew, if possible, the true formal Cause.

It appearing then, that the Antecedent Causes are, not only external exhalations in the Air, either Primary or Secondary, or both, but also, a predisposition in the Mass of Blood to be affected with their impressions, we are to consider, how these Antecedent Causes are to be put in Action by Procatartick Causes, and by what. The better to consider and understand what these Procatartick Causes are, and how they Act, we are to take Notice, in what Climates this Distemper may happen; because, both the Procatartick and the Antecedent Causes may vary, according to the different Countries, and the different Constitutions they happen in; which latter may vary, not only as the Temper of the Air does, but according to their different way of Living. We are likewise to take notice, where this Malady is Endemical chiefly, and accustomed to happen; and where it is only Epidemical, and rages only at some times.

As for the Climates it may rage in, that is uncertain; but wherever it does, the Infection is so contagious, that it never fails of being Epidemical. It is commonly observed, that it is chiefly Endemical in *Turky*, and *Africa*; according to which the Learned Dr. Mead

says p. 3. " that Plagues seem to be of the Growth of the Eastern and Southern parts of the World, and to be transmitted from thence into the colder Climates by the way of Commerce, " and p. 7. he further adds that " the History of the most terrible of all the Plagues, that ever were in these parts of the World, which was in the Year 1349 gives a manifest proof from whence all Europe may trace the Origin of these evils. viz. From *Asia*: for this taking it's rise in *China* in the Year 1346, advanced through the *East-Indies* to *Syria*, *Turkey*, *Egypt*, *Greece*, *Affrica*, &c. In 1347, some Ships from the Levant carry'd it to *Sicily*, *Pisa*, *Genoa*, &c. In 1348 it got into *Savoy*, *Provence*, *Dauphiny*, *Catalonia*, *Castile*, &c. In 1349 it seized *Scotland*, *England*, *Ireland*, and *Flanders* ; and in the next place *Germany*, *Hungary*, and *Denmark*, and in all these Countries made most incredible Havock.

That this Contagion may be transmitted by Goods, brought from an Infected place, and infect the Air they are opened in, no Body can doubt, who is acquainted with common Observation; yet how the Plague that begun in *China*, should take it's rise from *Asia*, I do not well understand; and since as this Learned Gentleman says, it appeared first in *China*, and since we have before observed, this Contagion in the Air is most likely to be occasioned by Subterraneous Mineral Exhalations, I know not why this Primary Contagion in the Atmosphere may not in other places derive it's Original from Corrosive Mineral Salts as was in *China*, since no part of the World can want Minerals, which may emit pernicious Effluvia.

How.

However in *Asia Minor* or *Assyria* and *Africa* it is chiefly Endemical. Since then as I said just now, both the Antecedent and Procatartick Causes differ, according to the difference of the Climate it chances to be in, I shall endeavour to shew, what may be the Antecedent, as well as Procatartick Causes, in those Countrys.

I have been, both in *Asia*, *Africa*, *Turkey*, *Greece*, *Italy*, *France*, and *Spain*; and have endeavoured to satisfy my self, both as to the Nature of their soil, and their Manner of Liveing; and for as much as I could observe, both in *Asia* and *Africa*, the Nature of their soil, as well as their way of liveing, are not much different, only in *Africa*, often after an only smell, hot breezes of Wind immediately ensue. The People in these Countreys are most commonly gross and Corpulent, and their Diet plentiful; and their drink chiefly Coffee or Water; the Laws of *Mahomet* not admitting them to drink Sprituous Liquors. This way of liveing, considering the heat of those Countrys in summer, disposes their blood to be thick and gross; being not high enough digested to make it thin; but, on the Contrary, the thinnest part being discharged by Diaphoresis or Sweat, their blood being thus thickened, and further chilled by extremity of Cold, especially in *Asia*, by the Effluvia of Nitre from the Snow hills, in the Extremity of heat Succeeding, their Blood hath not Room to ferment in the Vessels; nor are the Emunctories of the Body sufficient to discharge the Dregs or Recrements of the Blood; so that if there were no External contagious Cause, the Internal Disposition of the Humours would be sufficient to produce a Mortality, e-

qual to the most contagious Pestilence; but when both Causes concur, it must be more fatal; and would be more so than it is, if the meanness of their Drink did not render them less Subject to fevers and Inflammation; besides in the heat of Summer, they retire, as much as they can, into the cooler parts of the Country. In this Climate it appears, that the Antecedent Cause in the Blood is a congeries or heap of gross humours; and though the Air may contain contagious Effluvia or exhalations, and the Procatarhtick Causes which put them in Action be violent, yet it hath less Power, because their Blood less Inflamable.

The Learned Dr. Mead, quotes the best of Authors, to prove, that great heats, with Rain, and Southerly Winds, occasion this distemper, without taking Notice of any Internal Causes or external Contagion; but if those alone were sufficient, this Distemper would be much more frequent in *Italy* and *Spain*, where great Rains are more plentiful, and the heat equally as intense, the Southermost parts of *Italy* and *Spain*, being as near the Sun as most parts of *Asia*.

But one thing which I shall take Notice of, before I leave the Consideration of the Plague in these Countrys is. That though the Plague be there Endemical, yet it seldom rages long; but as soon as the Extremity of Heat is over, it presently decreases and vanishes. The Reason of which seems to be this, That their Blood being less Subject to Inflammation, by reason of their Temperate Drinking, as soon as the violent heat decreases, the Contagious particles being overpowered by a load of gross humours, are less able to exert themselves, their
venemous

venemous particles being sheathed in Mucus or slime.

But in *France*, where the People drink wine and live upon a thinner Diet, their Blood is more Inflamable and not only produces more violent Symptoms, but likewise, the Contagion is more lasting, and infectious; the contagious exhalations, for that Reason, more powerfully and easily exerting themselves.

And since this Distemper, is not only more durable and raging, than in other places it usually happens to be; it may not be amiss, if we take Notice further, what other Procatartick Causes may occasion the Continuance of this Malady; as well as, how the Antecedent Causes may contribute to compleat their misery.

Hitherto I have only taken Notice of violent heat, as a Procatartick Cause; which by putting the Humours in an Intense agitation and Ferment may put contagious particles in Action, in Bodies, as I said before, aptly predisposed. But there are other Causes, which may give rise to such Agitations, besides Intense heat; as Violent Passions of the Mind, the Forces of Imagination, The extraordinary violence of Contagious particles; So that sometime the External Antecedent Cause may be also a Procatartick Cause.

That violent Passions of the Mind, may put the Blood into a great agitation and Ferment, is evident to common Observation, which, disordering the Spirits and perverting the regular Temperius of the Blood, often occasions fevers of a benign, as well as a malignant kind; but when the Air is not only filld with contagious parts, but the Blood, is likewise Impregnated with them; such

such Disorderly Motions of the Spirits and Blood, may well produce more dreadfull Effects. Akin to passions of the Mind is the force of Imagination, when Persons are seized with fear and dread, which put the Spirits into disorderly Motions, and put the Blood into irregular ferments; the ill Effects of which appear in other Contagious Distempers. Several with Frights only, have been seized with the small Pox. I knew one, who, only by a fall, was with the suddenness of the Surprize so disorder'd, that the ferment it rais'd, presently kindled the prepared Lamp, and brought on that unexpected distemper; And no Doubt but the Dread and terrible apprehensions of this Distemper often occasion it.

That the extraordinary violence of Contagious particles, may some time kindle the fire themselves, is not improbable; for when the Air and Blood are both fully saturated and impregnated with these Destructive particles, so that they over-power and unsheath themselves from the Mucus part of the Blood, they presently raise an irregular ferment, without any other assisting Cause, to promote their Mischievous Effects. Indeed, when the Contagion is but fresh, those Mens Bodies must needs be impregnated, in some Measure, with the Qualities of the Air they breath in, Concurring Causes may be necessary to put these Venemous parts in Action; but when they not only float in Air but every thing about us, as well as our Bodies are made stone-houses and Receptacles of them, they must needs grow more powerful and promote their ill Effects more vigorously.

There

There seems to be yet, another Cause of this Distemper, which we have not yet taken Notice of, Viz. the overruling power of Divine Providence; for as the Honourable Mr. Boyle, says " 'tis very possible that some Pestilences may not break forth without an Extraordinary Interposition of Almighty God, provoked by the sins of Men. But as I am not to Judge of the Merits of Mankind's Transgressions; or to Measure out the Vengeance God Almighty may pour out upon the Children of Men; I shall not undertake a Task, which belongs to another Province; but leave it to those Faithfull shepherds of Christ, to whose Care he hath committed his Flocks.

Having Thus briefly taken a View, of the Antecedent and conjunct, as well as of the Procatartick Causes of the Plague or Pestilential Diseases, we shall next proceed, as we proposed, to Consider, the formal Cause; that is, how this Distemper is produced in human Bodies, and how it's Symptoms are occasioned. In order to which, it will be necessary to consider, after what manner this Distemper shews it self, and what Symptoms it is attended with. We shall not trouble our selves with an Historical account, how it hath appeared in former Ages, since those are past Cure or preventing; Nor shall we deliver a Journal, of how many have been destroyed, since that may breed Terror amongst the People, and, as we have observ'd, is one way to promote it, we shall think it of greater moment, if we could tell how many we may save, by preventing of it.

To know the better how this Distemper is produced, and how it's Symptoms are occasioned; we

we are to consider, the State and Condition
 of this Distemper as it now shews it self, an
 Account of which we shall here Transcribe from
 Mr. *Bradley*, sent by the Physicians at *Aix*;
 which is as follows. "The Contagious Dis-
 "temper which hath become the Reproach
 "of our Faculty here, for above a Month past,
 "is more violent than that at *Marseilles*; it
 "breaks out in Carbuncles Buboës, livid Blis-
 "ters, and purple Spots; the first Symptoms
 "are greivous pains in the Head, Consterna-
 "tions, wild looks, trembling Voice, cada-
 "verous face, a coldness in all the remote parts,
 "a low unequal pulse, pains in the Stomach,
 "Reachings to vomit, and these are followed
 "with sleepiness, Deliriums, Convulsions, or
 "Fluxes of Blood, the forerunners of sudden
 "Death. In the Bodies that are opened we
 "find Gangrenous Inflammations in all the
 "lower parts of the Belly, Breast and Neck.
 "Above fifty persons have dyed every day, for
 "three Weeks past, in the Town and Hospi-
 "tals; most of them fall into a dreadfull
 "Phrenzy, so that we are forced so tie them.
 From this Account it appears, that the con-
 tagious Particles are of a very malignant Kind,
 and endowed with very pernicious Qualities;
 and that the Spirits and Nerves are not only
 violently affected, but that the Texture of the
 Mass of Blood is wholly destroyed; so that it is
 not able to preserve it's due Mixture. The
 Gangrenous Inflammations and Tumours, e-
 vince, that the Mass of Blood is coagulated,
 so that it is unapt to circulate through the
 Vessels; the Livid Blisters and Spots prove
 that the thinner Parts of the Blood and Serum
 are seperated from the grosser, and strongly im-
 pregnated

pregnated with Corrosive Qualities; the one raising Blisters, the other corroding the blood, Vessels, which extravasate by Erosion, which occasions the Spots; which likewise occasions Fluxes of Blood, by corroding the Blood-Vessels in the Intestines: As for the Deliriums, no doubt but they proceed from alike Obstruction of the Glands in the cortical Part of the Brain, the Origin of the Nerves, and the Membrances of The Brain, which form the Coats of the Nerves; being likewise affected, occasion both Phrenzys and Convulsions.

From the whole, it is plain and evident to Reason, that whatever contagious Particles have the Power to produce such Symptoms, must needs be endowed with such Qualities as have the Capacity of Coagulating and Corroding; and on the other hand, the Blood must be endowed with viscid and gross Parts, which are subject to coagulation: Thus Rennet curdles Milk, and separates the viscid and gross Parts from the thin; yet Milk may have a coagulating Quality which does not immediately shew it-self, till it comes to the Fire, or is gradually put in Action by a gentler Heat; and so the Blood may have this contagious Quality in it, gradually imbibed from the Air about us, which may not exert it-self, till some procatartick Cause puts concurring Antecedent Causes in Action; but this familiar Example I only make Use of, to shew more plainly, and illustrate, how corrosive Qualities in the Air, affecting our Bodies conveniently disposed, may produce their Effects; and to render my Thoughts more intelligible to mean Capacities.

To illustrate this further, we may consider, how a particular Disposition of the Air in the

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To illustrate this further, we may consider, how a particular Disposition of the Air in the

Spring and Autumn, affects Bodies prædisposed to Agues, the groffer Parts of the Blood having by this lost their perfect Mixture; so that in the Urine of such Persons, you will find vast Quantities of Sediment or Settlings like Brick-Dust, which is a Specimen of what Condition the Blood is in; and nothing will remove this Malady, but what restores the Blood to it's perfect Mixture.

From whence it appears, that these contagious Particles, which no doubt are Mineral Sabine Effluvia out of the Earth, have a corrosive Quality, and destroy the Texture and perfect Mixture of the Blood, by coagulating it; and rendering it unfit for Circulation; separating the groffer Parts of prædisposed Blood from the thinner, to which they add a corrosive Quality likewise; and that these Particles are enabled to exert their ill Effects by some of the forementioned procatartick Causes, and so produce the forementioned Symptoms; which is the form Cause of the Plague.

C H A P. II.

Of the Methods proper to prevent Contagion from Abroad.

HAVING in the foregoing Chapter, enquired into the Nature of the Plague and it's Causes; we shall next propose what Cautions are necessary to prevent this Evil from being transmitted from Foreign Countries. We have briefly taken Notice, that Contagion may be transmitted from one Place to another, by secondary Causes; such as Goods
and

and infected Persons, which spread the same contagious Vapours in the Places they come to, which they received in the infected Places they came from; and since the Plague is so spreading and so raging an Evil, we cannot use too great Cautions to prevent ourselves from it, by examining strictly, from whence foreign Ships come, lest they bring with them so dreadful an Enemy.

In Order to this it hath been usual, for Ships which come from suspected Places, to ride Quarantine; a Ceremony much more of Form than Use; since Goods contained in so close a Place as a Ships Hould might retain the same pernicious Qualities, though continued there some Years; as the Honourable Mr. Boyle observes, who gives an Account, in his Book of the Subtlety of Effluvia, of a Man, who going by an infected House, at a considerable Distance of Time, received the Impressions of that Contagion, not but that the People in the Time of Quarantine, might be sufficiently drained of those contagious Particles, their Blood had contracted by breathing infected Air.

The worthy Dr. Mead proposes Lazarettos to be built on little Islands near our several Ports, for the Reception of Goods and Men; but since no such Islands are to be found, it might not perhaps be improper to assign the Island of Scilly for such a Purpose, which might serve both *England* and *Ireland* upon such Occasions, and being remote from both, might be convenient for that Purpose; for as the Dr. observes very well, keeping Men and Goods on Board seems to be of no Use; but at their first Arrival, if Men and Goods were both landed in some proper Place, the Sick and Well kept in distinct Places, and the

the Goods opened and exposed to the Air a considerable Time; this might be very serviceable and very proper. Nor is what he says of Sick Men being kept separate from the Sound amiss; nor is it inconvenient they should perform Quarentine in the Place appointed for sound Men.

It would not be improper neither, that the Goods should be unpack'd; but then, the Lazaretto for Goods ought to be built after a particular Form, that the Air might sufficiently penetrate it, otherwise a close Lazaretto would be of no Use.

He says p. 15. If there has been any contagious Distemper in the Ship, the sound Men should leave their Cloaths, which should be burnt; but methinks it might be as serviceable, if they were sent to the Lazaretto amongst the Goods, and were exposed there to the Air a considerable Time, the Air being as able to cleanse their Cloaths of the Infection as the Goods.

He says further, the Men should be washed and shaved, and having fresh Cloaths, should stay in the Lazaretto 30 or 40 Days: That it might be proper for them to stay in the Lazaretto I deny not, that as I said before, their Blood might be cleansed of the Impurities they had contracted by breathing infected Air. But who must wash and shave them I cannot tell, except one was appointed on Purpose for that Service, who would stand but an ill Chance to be always about such People, without a great deal of just Caution; for if he returned home, he would be as dangerous amongst his Neighbours as these suspected Persons.

P. 17. He says, the greatest Danger is from such Goods as are apt to retain Infection ; and in this he is right, for there can be no danger in such as cannot retain it. The Goods he mentions, and not without Reason, are Cotton, Hemp and Flax, Paper or Books, Silk of all Sorts, Linnen, Wooll, Feathers, Hair and all Kind of Skins. Though I think Hemp and Flax scarce come from suspected Places.

P. 19. This learned Dr. thinks, that whatever Cotten is imported from that Part of the World, *Viz. Turkey*, it should at all Times be kept in Quarentine, because it may have imbib'd Infection at the Time of it's Packing up, notwithstanding no Mischief hath been felt from it by the Ships Company. I cannot say, that too much Caution can be used, but I think they seldom pack it up in the Time of the Plague, and if it was done at another Time, it can hardly be infected, except Superficially ; however we cannot be too safe.

He further says, if a Ship come from any Place where the Plague hath raged, at the Time of the Ships Departure from it, with more than usual Violence, it will be the securest Method to burn all the Goods, and even the Ship. In Objection to this a Gentleman who writes himself a Lover of his Country, says, that he hath a vehement Suspicion, that by burning of infected Cloaths and the like, the venomous Effluvia or poysonous Particles adhering to them, may be carried along with the Smoak, and that the fatal Fumes being volatilized by the Fire, may fill all the Circumambient Air, and instead of restraining may greatly propagate the Contagion ; but I am inclin'd to think that the contagious Particles are
so

so altered by the Force of Fire, and Calcination, that they are put into another Form, and consequently loose their pristine Qualities; and we find that so strong a Poyson as sublimate Mercury, by further Sublimation, and the Addition of Quicksilver only, looses it's corrosive Qualities, and becomes a wholesome Medicine, and tho' he tells a Story of an Infection spreading in *Ipswich*, upon the burning of Rags, yet this Increase of the Distemper cannot certainly be attributed to the burning of those Rags, since the Infection was in the Town before, and might have spread, though they had never been burnt.

There is one Caution which the learned Dr. *Mead* takes Notice of which I think very well worth Observation, and therefore I shall transcribe it, says he, nor ought this further Caution to be omitted; that when the Contagion hath ceased in any Place by the Approach of Winter, it will not be safe to open a free Trade with it too soon: Because there are Instances of the Distempers being stopt by the Winter's Cold, and yet the Seeds of it not destroyed, but only kept unactive, till the Warmth of the following Spring hath given them new Life and Force. Thus in the great Plague at *Genoa* near 60 Years ago, which continued part of two Years, the first Summer about ten Thousand died; the Winter following hardly any; but the Summer after no less than Sixty Thousand. So that Goods brought from such Places, ought to be made use of with necessary Caution, if they should be imported.

There is another Caution, which ought to be taken Notice of, about Ships which con-
veigh

weigh Goods from suspected places ; for not only the Goods and Men ought to perform Quarrantine in Lazarettos, as well as their Cloaths, as before mentioned, but also the Ships Houlds which contained these Goods ought to be taken care of, and sufficiently cleanted, by sinking them in some Convenient place where they might fill with the Tide and discharge that Water again upon the Ebb, several times to wash away any contagious fumes communicated from the Goods to the Ship.

C H A P. III.

Of the Methods proper to prevent Contagion at Home.

THE Plague is a Malady of so malignant a kind, and hath so signally manifested it's outrageous fury, and dreadful Effects in all Ages; and especially in this present, that we cannot make use of too much Caution to prevent the appearance of it amongst us. We have already shewn what Cautions are necessary to prevent it from being imported, and communicated to us by secondary causes; but it is approached very near our Neighbourhood, and we know not how soon we may have it amongst us, from Primary contagious Causes at Home; we see it rage violently in a Country not far Distant from us, and for ought we know those contagious exhalations may be nearer us, than we think of; even under our Feet: For the Earth we live on, as well as theirs, is full of Mineral Bodies, which may emit obnoxious exhalations and infect our own Air, notwith-

standing we use all the Caution we can to keep those absent from Abroad.

It is worth our while therefore to consider, what Methods are most proper to guard us from so powerfull an Enemy; and there seems to be no way more likely and probable, than by reflecting on what Causes may, and do, occasion its rise and progress.

We have observed in the first Chapter of this Essay, in the First place, That the superficies of this Earth is Furnished with several Bodies or substances, that Emit unwholsome Vapours and exhalations; as dead Carcasses, nasty and sulsome Ditches, the Impurities of standing Waters, the offensive and odious smells of Slaughter-houses; to which we may add, the nastiness of Houses and Vaults under ground; which Emit Vapours and Exhalations most offensive; especially the latter; nor may Stables and Cow-Houses be left out of our Thoughts, which through the carelessness of Servants, often contract such noysom and offensive Smells, that one unacustomed to them can scarce Breath in them.

To prevent the ill Effects of such Incumbrances, care ought to be taken, and particular Persons appointed, to search into such Enormities; to see that no Dead Carcasses of what kind soever be left to stink above Ground, but that they be presently buried and covered with Earth. All Nasty and Stinking Ditches ought to be cleansed; and if possible, drains cut to vent and discharge all standing Waters, which Emit impure Smells; or the places which harbour such Impurities, if not too large; ought to be filled up and levelled; But some would much rather than take pains, encourage Nastiness at the expence

of their own Blood, and loose their Lives to save the trouble of preserving of them.

A great deal of care ought to be taken to cleanse Slaughter-Houses, where the smell of Corruption is often so intense and furlous, that it is not only an emblem, but carries the Effects of Mortality along with it, affording as pernicious fumes as the most contagious Effluviūms; and even Butchers Shops often retain such odious Smells, that when you buy their Meat, you seem to purchase the off-springs of Death, and to imbibe at your Nostrils the Tincture of Mortality. It is a pity greater care is not taken, to keep such places clean and wholesome.

In the next place not only Dwelling Houses but Stables and Cow-Houses ought to be frequently visited, by such as have authority to oblige them to keep them clean and decent. In some Houses their Sinks and Back-Yards are so noisom and nasty, that Graves, the Chambers of Death, are not to be compared to them. These publick Nausances ought to be minded, and their want of care, ought to be supplied by the Industry of others.

But Vaults under Ground ought peculiarly to be re-guarded; for here the Damps and Effluviūms of the Earth, are often so long retained, that they grow stronger and more offensive. If any Mineral-Salts are collected here, they are soon improved for the worse, and acquire a more vitriolick corrosive Quality; and are further improved, to produce mischievous Effects, by the Effluviūms of some sort of Goods contained in them, as Wine and Brandy. Such sort of Vaults, when they have been long unopened are ready to smother those that go into them,

and can add no grateful Qualities to the Air when they are opened. These ought therefore to be often opened, that the damp and fumes contained, may not grow worse by long confinement; and orders ought to be given, that it should be done; for who knows but contagious Effluvioms out of the Earth may be heaped up there, in such Quantities, as may be sufficient to begin Infection; whereas if they were gradually vented, they would be dispersed in the Air; and drove away with the Wind, before they were strong enough to produce any ill effects. It is observed in Cole-pits and other Mines, that such Mineral-Damps sometimes arise, that the Men that Work in them, would be stifled and dye, if they did not presently absent the place, and get up into the Air to secure themselves; and this they are forewarned of, by the burning of their Candles, but when these Damps are dispersed through the Eye of the Pit, as they call it, and scattered in the Air, they have not force enough to do any manifest prejudice; and even in the Vaults their Lights burn so faint, that they have not the power to give half the light they do in any other places.

As for these Effluvioms and Exhalations which flow from the different Natures of Soil, these indeed cannot be prevented: We are obliged to live as long as we can in the Land we inhabit; and to take our chance in that part of the World, which God Almighty hath been pleased to allot us; and we are to trust to his Providential care, which can over-rule, and divert those ill Accidents from taking too much place amongst us. He hath enabled us to temper our Constitutions accordingly, if we
will

will but mind it, and hath appointed Medicines properly applyed, to remove most Maladies we are liable to.

But there is yet another cause to be regarded, much akin to that heaped up in Vaults, but which do not always break forth from the Bowels of the Earth. *Viz*, Mineral contagious Exhalations, which infect the Air, and are the Principal and primary Causes of Pestilential Distempers; but these can be prevented by none, but a Superior Almighty Power; we are obliged to imbibe these ill Vapours whether we will or not, as long as we Breathe; but as I observed, in the first Chapter, these Effluvi-
ums alone are not able to produce ill effects without a predisposition in the Blood, and other concurring Causes; for as long as the Blood is thin enough to circulate through the Vessels, they cannot shew their ill effects.

The Method then to prevent the Contagion in the Air from taking place, and causing Pestilential Distempers, is to take such measures as may remove that Indisposition of the Blood, and the cause of it; and to avoid whatever other inconveniencies may concur to promote it, whether Procatartick Externally or Internally.

And since, from what we have already said, Chap. 1st. it appears, that the predisposition of the Blood, is it's being too gross and thick, and likewise depraved in Quality; and that it's grossness depends, either upon errors in Diet, weakness of Digestion, preternatural Exhausting of the Spirits, or sudden and violent Colds; and the vitiated Qualities may arise from the immoderate use of Salt, sour or sharp things; we are to take care,

That our Diet may be what is most agreeable to Nature, and easy of Digestion ; or at least in such proportion, that it may not overpower our Digestion in Quantity ; we are to eat, either Food which will easily dissolve, or so sparing in Quantity, that Nature may not be clogged and heap up Crudities. If our Stomach be weak, we ought to use means to strengthen it, and assist Nature in performing her Office, with convenient medicines ; and our Diet ought to be such as is proportionable to our Strength, and the Circumstances of our Constitution. We ought also to Dilute what we eat with a convenient Quantity of Liquids ; that our Nourishment may not be too thick and clogging ; avoiding too great Quantities, lest we err on the other Hand, and make it too thin ; for as too little Water with Mault, makes Liquors thick and clammy ; so errors on the contrary make it too small and Spiritless, and unfit to nourish. Avoid all immoderate Exercise, which may exhaust the Spirits, whether Venereal or otherwise, by Labour or Study, or anxiety of mind. The Spirits ought, if depressed, to be recruited with moderate refreshment, but not to excess ; for that depraves Digestion, heaps up Crudities, and likewise Inflames the Mass of Blood. We are likewise to be cautious in avoiding sudden and Excessive Colds, which Chill the whole Mass of Humours at once. A great many, when hot with Labour, expose themselves too suddenly to the Cold ; whereas their Blood ought to cool by degrees and leisure ; others unnecessarily expose themselves to the inconveniencies they might easily avoid.

Thus

Thus by taking care of our selves, we may preserve our Constitutions in a Natural State; and our Blood in a just Temper; we may also keep it free of depraved Qualities, by avoiding an immoderate use of Salt, or Soure Sauces; or Sharp and Bitng Qualities, which along with Salts, render Constitutions very much depraved. But if not withstanding all our care, or through neglect, we have contracted such Indispositions, we ought timely to apply our selves to skillful Persons, to remove these Indispositions; that by keeping our Blood in good Temper and a Natural Disposition and State, external Accidents might have less Effect upon us; for as I said before, we cannot help drawing those Contagious particles in but if our Blood be thin enough and sufficiently diluted, they will pass off again through the natural Emunctories of the Body; and though our Blood be impregnated with them, not be able to shew their ill Effects.

Having thus far proposed Methods to prevent the ill Effects of Infectious Contagion, if it should happen at home, by removing the Internal Antecedent Cause, which renders external Contagion less apt to effect; we are next to prevent the Procatartick Causes, if the former cannot be avoided, from putting them in Action; such as Intense Heat, Violent Passions of the Mind, the force of Imagination, and the extraordinary violence of Contagious particles.

To prevent Intense Heat from having it's full power and Effect, we are to keep our Bodies temperate; and to avoid any thing that may over Heate and Inflamm us; as excess in Drinking, especially Spirituous Liquors; to

avoid the Heat of the Sun-beams, and rather covet shady cool Places; yet not so cool, as to chill our Blood; our Diet ought to be moderate, and to consist of such things as afford good Juices, the Houses kept temperate and cool, so that the Heat of the Weather may not be so sensibly felt.

We are, as far as we can, to keep our Minds in a serene and calm Disposition; not to be concern'd at small Disappointments, nor to give way to passion and anger; lest fear and dreadful apprehensions should produce the Effects of false Imaginations, which often occasion this Distemper: But to arm our selves against the fear of Dangers, we ought with firm resolutions, and a steady Confidence, trust to the protection of Divine providence.

If the extraordinary violence of Contagious Particles are the Procatartick Cause, this, is not neglecting the means before proposed, is to be done, chiefly by the assistance of Physical means; of which in the next Chapter.

But sometimes this Malady may happen, as we have before noted, by the extraordinary Interposition of God Almighty, provoked by Mens Sins; in this Case, Repentance, with a lively Faith in God's Mercies, to appease his Vengeance, is the only Remedy; which being the Work of Divines, I shall leave it to them to exhort their Flocks to good Works, and a lively Hope, without moving them to Despair; which is a way, to bring on a Necessity of a Physical, as well as a Divine Cure.

C H A P.

CHAP. IV.

Of what Physical Methods are proper to prevent this Distemper, and what is to be done if it should happen.

IF the extraordinary Violence of contagious Particles, should be suspected to bring us in Danger of this dreadful Enemy of Mankind; besides the ordinary Means, by way of Precaution, prescribed in the foregoing Chapter, we are fly to the Assistance of Art, and make use of Medicines.

And that we may be better able to make use of proper Means, we are to consider the Nature of the Distemper, and what is the formal Cause; from which we shall be better enabled to judge, what Methods are most proper to be made use of, and what Intentions are to be insisted on.

From what we have said of Causes in general, it appears, that the formal Cause of this Distemper, is, that mineral Exhalations of the Earth, of a corrosive coagulating Quality, destroy the Texture and perfect Mixrure of the Blood, and make it unfit for Circulation; separating the grosser Parts of predisposed blood from the thinner, and that they are enabled to exert themselves by procatartick Causes, before mentioned.

Now if this Distemper is occasioned by any thing of a coagulating and Corrosive Nature; and if such Qualities destroy the perfect mixture of the Blood, and Seperates grosser parts, assisted by Procatartick Causes, Viz. excessive Heat

Heat, passions of the Mind, and God Almighty's Vengeance. The proper Intentions to prevent it seem to be Three. Viz. To attenuate the Humours that are too gross; To preserve the perfect Mixture of the Blood; and to avoid those Procatartick Causes.

As for the first Intention, which is, to attenuate the Humours which are too gross; that the Coagulation may be the less, if any should be made by Contagious vapours; or totally to prevent it, may be answered; by Bleeding in Quantities as Reason shall Direct, Purging, and Issues.

That Bleeding is convenient, when the Blood is too thick; is what no Body will deny who consults their Reason; for when the Vessels which contain it are empty'd; that makes room for such a Quantity of Liquids to dilute and attenuate or thin the remainder; and if it is a little too thick, a little Thinner will make it of a just Degree of Tenuity; if it is much too thick, a greater Quantity must be taken; so that this must be left to the Judgment of the Person that does it, who by the first bleeding will see of what consistence the Blood is; and if too thick or fizy, will by that be directed to Bleed again, and again, if Reasons Indicate. In this the Circumstances of the person are to be considered, and the Quantities to be accordingly; we are to distinguish what loss they are able to bear, and, if necessary, we are to enable them to bear it, by such means as may be proper to strengthen and fortify Nature, and help to attenuate and preserve the Mixture of the Blood, which we refer to the second Intention.

Some may Disrecommend Bleeding, lest it should weaken; but that can be remedied by proper cordials or Strengthening Medicines in the

the Intervals; as once I bled a Woman in a Rheumatism, finding her Blood too thick a great deal, several times at convenient distances; and gave her Cordials in the Intervals in such Quantities, as raised her pulse to a just height, which added strength and vigour, instead of diminishing it. Dr. Sydenham, in the Plague, recommends Bleeding to fainting; but then the Spirits must be recruited, otherwise it would be prejudicial, by such things as likewise preserve the Mixture of the Blood.

As for purging, that must be moderate, I would not hurry Nature, nor put the humours in Agitation and ferment; this would be prejudicial; I would rather give something that might give a stool or two a day, and carry the gross humours off gradually and quietly; which is the best way, especially in this Case. In some, discharges are to be made quick and large, but not of that here; In this case it is to be done Leisurely, and with such things as fortify and Strengthen Nature; as Elixir Proprietatis, in proportionable doses to the age and strength of the Person, which may be taken every Morning, or as is proper, which must be left to the Judgment of them that give it.

That Issues are convenient, is the Judgment of Mr. Hodges, and is very Reasonable, since it is a ready and constant vent for gross or sharp humours; and I have not only used upon other Occasions, not unlike it, but heard it recommended by a Worthy and Learned Gentleman Mr. William Tovey, who now resides, and practises with Reputation in London.

The Second Intention is to preserve the Mixture of the Blood; which will be more easily

15
easily done, when the first is put in Execution. This must be done by proper Alexipharmicks, which fortify Nature and Dispose the Morbifick matter to be discharged by gentle Diaphoresis; which is easily done when the Blood is first attenuated by convenient Evacuations; and these are likewise cordial, and raise the Spirits, which might be Sunk by Bleeding.

What Medicines may be proper upon this Occasion are plentifully set down by Diemerbroeck in his Excellent Treatise of the Plague and Pestilential Diseases; we shall not here load the Publick with too much variety, lest they should be unskill'd in making a good choice; one good Medicine is better than a great many of less Effect, we shall therefore recommend his Antipestilential Pills, which may be of Use.

The Composition is as follows.

Take the Roots of Butterbur, Carline Thistle, Dittany, Angelica, Elecampane, of each an Ounce and half; of Gentium a Drachm and half; of the best Rheuburb an Ounce and half; of Zedeory, one Drachm. Of the whitest Agarick half an Ounce; of the Herbs, Scordium, lesser Century, Rhue each half an Ounce, Carduus Benedictus Six Drachms; of the Flowers of Stæchas, a Drachm and a half; of Citron and Orange Seeds, each a Drachm; powder them, and infuse them cold, in three Pounds of White-Wine; boil it a quarter of an Hour, and strain the compressed Juice through Paper. In this Liquor dissolve three Ounces and a half of Aloes; three Drachms and a half of fine Myrrh in Drops; evaporate the superfluous Moisture in a China Dish, to the Consistence of a Mass fit for Pills; take two or three every other Day. When

(41)
When this is used, Elixir Proprietatis needs not; but if you take the Elixir every Morning, Viz. about 15 or 20 Drops, more or less as you find the Body open, and about 30 Drops of Tincture of Virginian Sneak-Root, every night in Beer and Wine, it may do as well, and better than this troublesome Composition.

Some recommend the Use of Vinegar; but that can only be serviceable, as it cools the Blood and may prevent a Ferment and Agitation by Heat; but if notwithstanding this Distemper should appear, it would but increase the Evil, by rendering the Blood more liable to Stagnation and Coagulation; yet it may be of good Service to sprinkle Rooms with it, and not only the Floors, but the Walls.

As to the Third Intention, which is, to guard our selves from the Procatartick Causes, sufficient Cautions have been given in the foregoing Chapter. We are next to consider, what may be proper to be done if it should happen.

What may be most proper to be done, if this Evil should happen to come amongst us, either by the Neglect of Care to prevent it from being transported from Abroad; or from any primary Cause at home, by vitious and contagious Effluvia of this Part of the Globe we live in; two Things are to be considered, Viz. What is to be done to those already infected; and what is to be done to prevent those that are well, from being infected with this Contagion, or, though it cannot be avoided, but their Blood must needs be affected with the contagious Particles of the Air they breath, how we may best prevent the same from taking place, so as to produce their ill Effects.

(42)
As for what is necessary to be done, to those already infected, if it should happen, we cannot pretend fully to explain; because, the Method must vary according to the Symptoms; and no body can tell what Symptoms might attend it in this Climate, which is much different from that Abroad; and not only the Climate varies, but our Constitutions, and Manner of Living also; which would occasion a Difference in Symptoms, and consequently in the Method of Cure. All that we can therefore say in general, is, that since the internal Antecedent Cause, is too much gross Humours in the Mass of Blood, which renders it too apt to coagulate and throw off gross Parts, to obstruct the Vessels; when these contagious Particles are put in Action, we are to attenuate and dilute that thick Blood by sufficient Discharges and Evacuations; as Bleeding, Issues &c. as Dr. Sydenham and Mr. Hodges have observed; and to prevent the Spirits from being sunk by such Evacuations by Cordials, and such Medicines as preserve the Mixture of the Blood; as compound Gentian and Wormwood Waters, Tincture of Virginian Snake Root &c. which may be the best; but as for particular Methods, those must be altered as the Symptoms vary.

But since it is impossible to prescribe a Method of Cure, for that which is not in being, or does not exist, and which may be prevented if proper Means be used, we shall only briefly add, what may be proper to be done to prevent those that are well, from being infected, or these contagious Particles from taking Place so as to produce their ill Effects.

What may be convenient on this Occasion, will in a great Measure appear, from what hath been

been already said in the Third, and the beginning of this Chapter; from whence it appears, that such Places ought not only to be preserved from annoyson and unwholesome Vapours, but our Bodies, by proper Methods are to be put into so convenient and good a Disposition, that the contagious Particles may be the less able to take Place and produce ill Symptoms.

I shall not therefore repeat what hath been already said sufficiently at large; but shall only add, that if such a Misfortune should happen, it might be necessary to separate the Sick from the Sound in Places at a convenient Distance; neither too close, to increase Inflammation, nor too cool to thicken the Blood and render it more apt to Coagulation and Stagnation. Thus the Air will be less impregnated with secondary Effluvioms from infected Bodies; and sound ones only have the Contagion Primary in the Air to guard themselves from. The Houses of those that are well, ought also to be well cleansed and washed daily, and the Streets too, if possible, to keep them cool and wholesome.

To add more upon this Subject would only be to repeat what we have already said in proper places, which with due Care may be sufficient to prevent approaching Dangers, which God Almighty preserve us from.

F. I. N. I. S.

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